



In re Application of:

Saulpaugh, et al.

Serial No. 09/659,915

Filed: September 11, 2000

# For: Automatic Lease Renewal with Message Gates in a Distributed Computing Environment

§ Group Art Unit: 3629  
§  
§ Examiner: Fisher, Michael J.  
§  
§ Atty. Dkt. No.: 5181-63600  
§ P4992

CERTIFICATE OF MAILING  
37 C.F.R. § 1.8

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# APPEAL BRIEF

**Mail Stop Appeal Brief - Patents**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir/Madam:

Further to the Notice of Appeal filed September 8, 2005, Appellants present this Appeal Brief. Appellants respectfully request that the Board of Patent Appeals and Interferences consider this appeal.

## **I. REAL PARTY IN INTEREST**

As evidenced by the assignment recorded at Reel/Frame 011094/0050, the subject application is owned by Sun Microsystems, Inc., a corporation organized and existing under and by virtue of the laws of the State of Delaware, and now having its principal place of business at 4150 Network Circle, Santa Clara, CA 95054.

## **II. RELATED APPEALS AND INTERFERENCES**

No other appeals, interferences or judicial proceedings are known which would be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

## **III. STATUS OF CLAIMS**

Claims 1-50 stand finally rejected. The rejection of claims 1-50 is being appealed. A copy of claims 1-50 is included in the Claims Appendix herein below.

## **IV. STATUS OF AMENDMENTS**

No amendments to the claims have been submitted subsequent to the final rejection.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

In regard to the claimed subject matter, Appellants note that the present application has been assigned to Art Unit 3629 which covers the field of Electronic Commerce - Business Processing, Cost/Price, Reservations. However, the claimed subject matter does not pertain to this field. A more appropriate Art Unit would have been one of the 2140 or 2150 Art Units in the field of Computer Networks or perhaps Art Unit 2194 in the field of Interprogram/Interprocess Communications.

Independent claim 1 is directed to a method for managing resources for clients by services in a distributed computing environment including a client computer process operatively coupled to a client message endpoint configured to send messages to and receive messages from the service in the distributed computing environment. As described starting on page 22 of Appellants' description, a distributed computing environment may include a programming model for facilitating distributed computing. The distributed computing environment may provide an interface that facilitates clients connecting to services, such as via an API (application programming interface) providing send message and receive message capabilities. *See, e.g.*, Figs. 2 - 5, 10a, 10b, page 13, line 4-12; page 21, line 6 – page 22, line 20.

A service's capabilities may be expressed in terms of messages the service accepts. The distributed computing environment may allow clients to use all or some subset of a service's capabilities. In some embodiments, all operations in the distributed computing environment may be embodied as messages sent between clients and services. Clients and services may find each other and establish a communication channel enabling bi-directional message passing. A data description language, such as XML, may be used to describe a service such that code may be generated to access that entity. According to some embodiments, the generated code for accessing the service may be referred to as a message endpoint or message gate. *See, e.g.*, Figs. 2 - 5, 7-12, 14; page 27, line 18 – page 28, line 29; page 29, lines 1- 28; page 30, line 1-21.

In some embodiments, the code for a message endpoint may be generated according to a schema defining messages the service accepts. For example, a client may construct a message endpoint (also referred to as a gate) for communicating with the service according to the schema. Message gates or endpoints may therefore provide a mechanism to send and receive messages between client and services. A message gate may be constructed to verify the type correctness of messages or to authenticate the sender of a message. A message endpoint may implement an API to send and receive messages. For instance, in some embodiments, message endpoints may support a fixed minimum API to send and receive messages and the API may be extended to support

other features, such as leasing and lease renewal messages. *See, e.g.*, FIG. 10a, 10b, 11a, 11b, 12, 15; page 31, lines 13-25; line 27 – page 32, line 13; page 32, line 21 – page 33, line 23; page 33, line 24 – page 34, line 19.

The method of claim 1 includes a client process obtaining lease access to a resource provided by a service. In general, leases may help the overall distributed system manage independent clients and services. In some embodiments, leases may be used in a distributed computing environment to deal with partial failure, resource synchronization, scheduling, or to provide an orderly resource cleanup process. Services may issue leases to clients and provide operations on those leases. For example, according to one embodiment, services may provide operations for requesting, renewing and canceling leases. In one embodiment, all leases may be granted for a particular amount of relative time (duration of lease) that may be negotiated. The requester may specify a certain amount of time (e.g. in seconds), and the grantor may grant the lease for any amount of time up to the requested amount. In some embodiments, leases may be for an indefinite lease period. *See, e.g.*, FIG. 10a, 10b, 11a, 11b, 12, 15; page 13, line 14-21; page 65, line 15 – page 66, line 23; page 73, lines 1 – 12; page 76, lines 12 – 17; page 77, lines 5 – 13; page 78, line 26 – page 79, line 9; page 87, line 22 – page 88, line 18; page 89, lines 2 – 21.

The method of claim 1 also includes the client message endpoint receiving a lease renewal request message that references a resource provided by the service and the client message endpoint sending a lease response message that requests renewal of the lease access to the resource provided by the service. For example, request-response message pairs may be employed to claim, release, and renew a lease. In one embodiment, the lease renewal request message may be sent to the client prior to expiration of a previously granted lease period. The client may respond to the message with a lease renewal response message to the service requesting renewal of the lease. In various embodiments, the lease renewal response message may include a requested lease period or may request that the lease be continued. In one embodiment, the client may return a lease renewal response message that instructs the service that the lease is no longer

required. In one embodiment, the client may not send a lease renewal response message, and the service might assume, when no response message is received by the service, that the client no longer requires the lease. Services may send renewal message to detect client failures as well, according to some embodiments. *See, e.g.*, FIG. 10a, 10b, 11a, 11b, 12, 15, 25; page 13, line 14-21; page 31, lines 12-17; page 65, lines 5 – 13; page 65, line 15 – page 66, line 23; page 73, lines 1 – 12; page 76, lines 12 – 17; page 77, lines 5 – 13; page 92, lines 16- 30; page 93, lines 2 – 21.

Additionally, according to the method recited by claim 1, the client message endpoint automatically performs the receiving of a lease renewal request message and the sending of a lease renewal response message without intervention by the client process. For example, an automatic lease renewal mechanism may be implemented to relieve the client of the responsibility of handling out of band messages, and thus reduce client complexity. Renewal messages may arrive in an “out of band” manner that may be inconvenient for the client to handle and that may complicate the client’s logic and/or increase its complexity. A client may not be able to predict when a renewal message will be sent from a service. Thus, an automatic lease renewal mechanism may be implemented to relieve the client of the responsibility for handling renewal messages. Each client message endpoint may receive renewal messages and automatically respond to them without help from the client process, in one embodiment. In another embodiment, a client message endpoint may monitor elapsed time and send a lease renewal message prior to the expiration of a granted lease period. A lease renewal request message may also include other information or requests. For instance, a renewal request may claim the lease at a current access level or at a different access level. In one embodiment, a message endpoint may contain a single renewal response message that is automatically sent to the service when the gate receives the renewal message. As with lease renewal request response messages noted above, a lease renewal request from a client to a service may specify a requested lease period, and the service leasing the resource to the client may grant a lease period equal to or less than the specified period. *See, e.g.*, Figs. 10a, 10b, 11a, 11b, 12, 15, 25, 44; page 14, line 6 – 23; page 65, line 15 –

page 66, line 23; page 73, lines 1 – 12; page 76, lines 12 – 17; page 77, lines 5 – 13; page 89, lines 7-20.

Furthermore, the client process is configured to send and receive messages via the client message endpoint to access the resource provided by the service. As noted above, a client may utilize a client message endpoint or message gate to send and receive messages with the service. A client message endpoint may perform the actual sending (and receiving) of messages to (and from) the service. Thus, the client may run the service, such as to access a resource provided by the service, via message passing provided by the message endpoint, according to some embodiments. A message gate may provide a level of abstraction between the client and the service. For example, a client may access a service through a message gate rather than accessing the service directly. Thus, in some embodiments, a client message endpoint may automatically handle lease renewal messages while also providing a mechanism to allow the client process to access a resource provided by the service. *See, e.g.*, Figs. 2 - 5, 10a, 10b, 11a, 11b, 12, 15, 25, 44; page 33, line 25 – page 34, line 11; page 65, line 15 – page 66, line 23; page 73, lines 1 – 12; page 76, lines 12 – 17; page 77, lines 5 – 13.

Independent claim 24 is directed to a distributed computing system including a service device and a client device. The client device of claim 24 includes a client process executable within the client device and a client message endpoint executable within the client device and operatively coupled to the client process. The client message endpoint is configured to send messages to and receive message from the service device. Please refer to the discussion of claim 1 above for a more detailed description regarding message endpoints sending messages to and receiving messages from services.

The client process of claim 24 is also configured to obtain lease access to a resource provided by the service device and the client message endpoint is configured to receive a lease renewal request message that references the resource provided by the service device. The client message endpoint is also configured to send a lease renewal response message that requests renewal of the lease access to the resource provided by

the service device. Additionally, as described above regarding claim 1, the receiving of a lease renewal request message and the sending of a lease renewal response message are performed automatically by the client message endpoint without intervention by the client process. Furthermore, the client process is configured to send and receive messages via the client message endpoint to access the resource provided by the service. Please refer to the discussion of claim 1 for more details regarding client processes and client message endpoints obtaining and renewing leases.

Independent claim 41 is directed to a tangible computer accessible medium including program instructions that are computer-executable to implement the method recited by independent claim 1. Please see the discussion of claims 1 and 24 above for a detailed discussion.

Independent claim 12 is directed to a method of managing resources provided for clients by services in a distributed computing environment in which a client process obtains access to a resource provided by a service for a first granted lease period where the client process is operatively coupled to a client message endpoint configured to send messages to the service. As described above regarding claim 1, a distributed computing environment may include a programming model for facilitating distributed computing. The distributed computing environment may provide an interface that facilitates clients connecting to services, such as via an API providing send message and receive message capabilities. A service's capabilities may be expressed in terms of messages the service accepts. The distributed computing environment may allow clients to use all or some subset of a service's capabilities. In some embodiments, all operations in the distributed computing environment may be embodied as message sent between clients and services. Clients and services may find each other and a communication channel may be established enabling bi-directional message passing. A data description language, such as XML, may be used to describe a service such that code may be generated to access that entity. The generated code for accessing the service may be referred to as a message gate or message endpoint. *See, e.g., Figs. 2 - 5, 7-12, 14; page 27, line 18 – page 28, line*

29; page 29, lines 1- 28; page 30, line 1-21). (Figs. 2 - 5, 10a, 10b, page 13, line 4-12; page 21, line 6 – page 22, line 20.

In some embodiments, all leases are granted for a particular amount of relative time that may be negotiated. In other words, the client, or the client message endpoint, may specify a certain amount of time, such as in seconds or minutes, and the grantor may grant the lease for any amount up to the requested amount of time. *See, e.g.*, Figs. 25, 44; page 13, lines 14 – 21; page 14, lines 6-23; page 88, lines 7-17; page 91, lines 11-24; page 91, line 26 – page 92, line 3.

The method of claim 12 also includes the client message endpoint sending, prior to the first granted lease period expiring, a lease renewal message that request access to the resource provided by the service for a second lease period. For example, as described above regarding independent claim 1, the service may send the client a lease renewal request message and the client may respond with a lease renewal response message requesting renewal of the lease, according to some embodiments. In other embodiments, the service may not send a lease renewal request message to the client. Instead, the client may monitor a granted lease period and send a lease renewal message to the service prior to the granted lease period expiring. Such a lease renewal message may specify the resource that is being leased and a requested new lease period. *See, e.g.*, FIG. 25, 44; page 13, lines 14 – 21; page 14, lines 6-23; page 66, lines 4-23; page 73, lines 1-12; page 83, line 26 – page 84, line 2; page 86, lines 11 – 25; page 88, lines 7-17; page 92, lines 16-30; page 93, lines 2-9.

As recited in claim 12, the client message endpoint automatically performs the sending of the lease renewal message without client processes intervention. For example, as described above regarding claim 1, an automatic lease renewal mechanism may be implemented to relieve the client of the responsibility of handling out of band messages, and thus reduce client complexity. Each client message endpoint may receive renewal messages and automatically respond to them without help from the client process, in some embodiments. In other embodiments, a client message endpoint may monitor



elapsed time and send a lease renewal message prior to the expiration of a granted lease period. A lease renewal request message may also include other information or requests. For instance, a renewal request may claim the lease at a current access level or at a different access level. In one embodiment, a message endpoint may contain a single, set-aside renewal response message that is automatically sent to the service when the gate receives the renewal message. In one embodiment using time-based leasing, a lease renewal request from a client to a service may specify a requested lease period, and the service leasing the resource to the client may grant a lease period equal to or less than the specified period. *See, e.g.*, Figs. 10a, 10b, 11a, 11b, 12, 15, 25, 44; page 14, line 6 – 23; page 65, line 15 – page 66, line 23; page 73, lines 1 – 12; page 76, lines 12 – 17; page 77, lines 5 – 13; page 89, lines 7-20.

Additionally, the client process may be configured to send and receive messages via the client message endpoint to access the resource provided by the service. As noted above, a client may utilize a client message endpoint or message gate to send and receive messages with the service. A client message endpoint may perform the actual sending (and receiving) of messages to (and from) the service. Thus, the client may run the service, such as to access a resource provided by the service, via message passage provided by the message endpoint, according to some embodiments. A message gate may provide a level of abstraction between the client and the service. For example, a client may access a service through a message gate rather than accessing the service directly. Thus, in some embodiments, a client message endpoint may automatically handle lease renewal messages while also providing a mechanism to allow the client process to access a resource provided by the service. *See, e.g.*, Figs. 2 - 5, 10a, 10b, 11a, 11b, 12, 15, 25, 44; page 33, line 25 – page 34, line 11; page 65, line 15 – page 66, line 23; page 73, lines 1 – 12; page 76, lines 12 – 17; page 77, lines 5 – 13.

Independent claim 33 is directed to a distributed computing system including a service device and a client device. The client device includes a client process and a client message endpoint both executable within the client device. The client message endpoint is coupled to the client process and is configured to send messages to and receive

messages from the service device. The client process is configured to obtain lease access to a resource provided by the service device. Additionally, the client message endpoint is configured to send, prior to the first granted lease expiring, a lease renewal message that requests access the resource provided by the service device for a second lease period.

As discussed above regarding claims 1 and 12, the client message endpoint sends the lease renewal message automatically without client process intervention and the client process is configured to send and receive messages via the client message endpoint to access the resource provided by the service. Please refer to the discussion of claims 1 and 12 above for more a detailed discussion regarding client message endpoints automatically sending lease renewal messages and about clients sending and receiving messages via a client message endpoint to access a resource provided by a service.

Independent claim 46 is directed to a tangible computer accessible medium including program instructions that are computer-executable to implement the method recited by independent claim 12. Please refer to the discussion of claim 12 above for a detailed summary of such a method.

## **VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

1. Claims 1-50 stand finally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of Waldo et al. (U.S. Pat. No.: 6,237,009) (hereinafter “Waldo”).

2. Claims 1-50 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Wollrath et al. (U.S. Patent 5,832,529) (hereinafter “Wollrath”).

## **VII. ARGUMENT**

### **First Ground of Rejection:**

Claims 1-50 stand finally rejected under the judicially created doctrine of

obviousness-type double patenting as being unpatentable over claims of Waldo et al. (U.S. Pat. No.: 6,237,009) (hereinafter “Waldo”). Appellants traverse this rejection for at least the following reasons.

The Examiner rejects Appellants’ independent claims (1, 12, 24, 33, 41 and 46), citing the Abstract, claim 1 and claim 7 of the Waldo patent. By relying on the Abstract of Waldo, the Examiner has failed to state a proper *prima facie* double-patenting rejection. As stated at 804 II.B.1 of the M.P.E.P., “[w]hen considering whether the invention defined in a claim of an application is an obvious variation of the invention defined in the claim of a patent, *the disclosure of the patent may not be used as prior art* (emphasis added).” The Examiner’s reliance upon the Abstract of Waldo is clearly improper. Thus, the Examiner’s double patenting rejection is also improper.

Moreover, neither claim 1 nor claim 7 of Waldo teach or suggest all the limitations of Appellants’ independent claims. For example, claim 1 of Waldo recites a lease manager receiving from a client an indication of a lease on a network service and managing the lease on behalf of the client. Claim 7 of Waldo recites notifying the client that the lease is near expiration. However, Appellants’ independent claims recite that the same message endpoint used by the client process to send and receive messages for accessing the resource provided by the service also sends the lease renewal response message automatically without intervention by the client process. Neither claim 1 nor claim 7 of Waldo teach or suggest a client message endpoint receiving a lease renewal request message or the client message endpoint sending a lease renewal response message, as recited by Appellants’ claim 1.

Additionally, claims 1 and 7 of Waldo do not teach or suggest a client message endpoint that receives a lease renewal request message and sends a lease renewal response message and via which the client process sends and receives messages to access the resource provided by the service. In contrast, claims 1 and 7 of Waldo only recites a lease manager that manages a lease on behalf of a client. The claims of Waldo are completely silent as to how the client accesses a resource provided by the leased service.

Thus, the claims of the Waldo patent do not teach or suggest Appellants' independent claims.

The Examiner argues that it would be obvious to automate the process claimed by Waldo. However, even if the lease management system in Waldo were automated, it would not suggest *that the same message endpoint* used by the client process to send and receive messages *for accessing the resource* provided by the service also sends the *lease renewal response message*. As noted above, Waldo teaches a lease manager that manages a lease on behalf of a client, but which is clearly not used to access a leased resource provided by a service. Thus, in contrast to Appellants' claim 1, Waldo employs a completely distinct mechanism for lease messaging from how the client communicates with resources. Therefore, Appellants' claim 1 is clearly not obvious from the claims of Waldo. Similar arguments apply to independent claims 12, 24, 33, 41 and 46.

In response to Appellants' arguments, the Examiner responds, in the Response to Arguments section of the Final Action, "the client message endpoint would be the email program used to send and receive email." **However, Waldo does not use email messages in his lease renewal service.** Instead, as described in Appellants' previous responses, Waldo utilizes remote method invocation (RMI) for clients to interact with the lease manager by invoking the methods exposed by the lease manager. Email messages and email programs are not part of Waldo's system. Email communications are at an application layer completely separate from the lease management between computer processes in Waldo. The Waldo reference makes absolutely no mention of email messages or email programs. Thus, the Examiner's statement is completely unsupported by the Waldo reference (let alone the claims of Waldo) and is based solely on the Examiner's own erroneous speculation.

In the Advisory Action the Examiner asserts that sending messages using a network would implicitly be email, citing the Abstract of Waldo. However, as noted above, the Examiner's reliance upon the Abstract of Waldo is clearly improper for a double-patenting rejection. The Examiner also states in the Advisory Action, "[u]sing

computers to send messages to other user's computers would be email.” The Examiner is clearly incorrect. As is well understood by those of ordinary skill in the art, there are many different types of message-based communication between computers using a network. Email is a form of application-level messaging between human users. Neither Waldo nor the present invention pertain to this type of messaging. As noted above, Waldo does not use email messages. Waldo's lease manager and client are not entities using email programs or protocols to send and receive email messages. Instead, they are explicitly described in Waldo as computer processes communicating with other computer processes via RMI (remote method invocation) which is a standard interprocess communication mechanism. As anyone of ordinary skill in the art knows, RMI does not employ any aspect of email. Nor does it suggest all the features of Appellants' independent claims.

Furthermore, the exact nature of the messaging system used in Waldo is irrelevant to Appellants' argument. The claims of Waldo simply do not teach or suggest that the same message endpoint used by the client process to send and receive messages for accessing the resource provided by the service also sends the lease renewal response message. Nor would it be obvious to modify what is taught by Waldo's claims to include such a message endpoint. As noted above, Waldo teaches a lease manager for managing leases separate from anything used by a client process to send and receive messages for accessing a resource provided by a service.

For the reasons stated above, Appellants respectfully request reversal of the obviousness-type double patenting rejection.

### **Second Ground of Rejection:**

Claims 1-50 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Wollrath et al. (U.S. Patent 5,832,529) (hereinafter “Wollrath”). Appellants traverse this rejection for at least the following reasons. Different groups of claims are addressed under their respective subheadings.

**Claims 1-6, 24-28 and 41-43:**

Regarding claim 1, Wollrath fails to teach or suggest a client message endpoint receiving a lease renewal request message that references the resource provided by the service. The Examiner cites claims 1, 9, 11 and 52, FIG. 2 and the Abstract of Wollrath, none of which describe or illustrate anything regarding receiving a lease renewal request message. Instead, claims 1, 11 and 52, FIG. 2 and the Abstract of Wollrath simply describe a process by which a client may initially obtain a shared lease for a resource for a granted lease period. Claim 9 of Wollrath mentions sending a request to the lease manager process for a new lease period upon a determination that the granted lease period is about to expire. However, this determination is made by the user of the resource based on the length of the granted lease period. The portions of Wollrath cited by the Examiner do not mention anything regarding a client message endpoint *receiving a lease renewal request* message that references the resource provided by the service. Wollrath teaches the use of “dirty” and “clean” calls by an application, which the Examiner equates to a client, in order to obtain and release access to a distributed resource (Wollrath, column 5, lines 8-27). However, Wollrath does not make any mention of a client message endpoint receiving a lease renewal request message. Instead, Wollrath teaches that a client renews access to a resource by sending another “dirty call” (Wollrath, column 6, lines 59-64). Thus, Wollrath teaches that clients send messages to renew leases, but fails to teach or suggest a client message endpoint receiving a lease renewal request message.

Additionally, Wollrath does not teach or suggest a client message process sending a *lease renewal response* message automatically without intervention by the client process, wherein the client process is configured to send and receive messages via the same client message endpoint to access the resource provided by the service. The Examiner argues that it would be obvious to automate the lease renewal process in light of the teachings of Wollrath. First of all, as noted above, Wollrath does not mention anything regarding a client message endpoint receiving lease renewal request messages

or sending lease renewal response messages. As described above, Wollrath teaches that an application may renew a lease by sending additional “dirty calls.” Wollrath only mentions an application sending a request to a process for a new lease period upon a determination *by the user of the resource* that the granted lease period is about to expire. The portions of Wollrath cited by the Examiner do not teach anything regarding a client message endpoint receiving a lease renewal request message and automatically sending a lease renewal response message. Even if the lease management of Wollrath were automated, it would not suggest a client message endpoint that receives a lease renewal request message and automatically sends a lease renewal response message.

In response, the Examiner argues, “the processes of renewing and originating a lease are similar in their basics, a paper denoting lease terms must be negotiated and signed by both parties” (Response to Arguments, Final Action). This statement by the Examiner indicates a clear misunderstanding of both Appellants’ claimed invention and the teachings of Wollrath. Neither Appellants’ claimed invention nor Wollrath has anything to do with paper leases signed by parties. Wollrath does not mention any paper lease documents, nor is Wollrath concerned with paper lease documents. Instead, Wollrath teaches a method of distributed garbage collection (the term “garbage collection” is used in the computer sciences to refer to techniques for reclaiming computer memory resources) involving computer processes allocating and deallocating computer resources. The Examiner is apparently confusing commercial leases between people or companies with the concept of computer processes leasing computer resources from computers or processes. A computer process leasing a computer resource, as described in Wollrath, does not inherently require or suggest lease renewal messages and lease renewal response messages.

Furthermore, Wollrath does not teach or suggest that the same message endpoint used by the client process to send and receive messages *for accessing the resource* provided by the service *also sends the lease renewal response message* automatically without intervention by the client process. As Wollrath already includes two separate mechanisms for separately accessing a leased resource and for lease management

communications, even if the lease management of Wollrath were automated, it would not suggest that the same message endpoint used by the client process to send and receive messages for accessing the resource provided by the service also sends the lease renewal response message automatically without intervention by the client process.

In response, the Examiner argues, in the Advisory Action, that communication in Wollrath's system is implicitly email based and that the "message endpoint would be the email system used" and contends that such a email system would be used both for accessing a leased resource and for sending lease renewal response messages. However, as with the Waldo reference described above, Wollrath's system does not rely on, or even include, email messages or email systems. As with Waldo's system, Wollrath relies upon remote method invocation (RMI) for communication and interaction between the various computer program components. The Examiner's statements regarding email are completely incorrect and irrelevant.

The Examiner also states in the Advisory Action, "the use of email would not make the instant application patentably distinct." However, Appellants' claims do not recite any email messages and Appellants have not argued that the use of email would make Appellants' claims patentably distinct. In contrast, as noted above, the Examiner's arguments regarding email are both incorrect and irrelevant to Appellants' arguments.

The Examiner has clearly misunderstood the teachings of the cited prior art as well as Appellants' claimed invention. For example, the Examiner seems to be confusing commercial advertisements for goods or services with computer service advertisements that include information to enable access by *computer-based client processes* to resources provided by *computer-based service processes* and made available to the client processes. For example, regarding claim 9, the Examiner states in the Response to Arguments, "[t]he offer of renewal of a lease would be considered to be an advertisement as it is a message for the purpose of eliciting a monetary response from the viewer." The types of commercial leasing and advertising the Examiner is referring to have absolutely no relevance to Appellants' claims or to the Waldo and Wollrath references.



### **Claims 7 and 29:**

Regarding claim 7, Wollrath fails to teach or suggest where the lease renewal response message requests exclusive lease access to the resource, where exclusive lease access prevents other client processes from obtaining lease access to the resource contemporarily with the client process. The Examiner fails to cite any portion of Wollrath in the rejection of claim 7. Instead, the Examiner merely states “leases are negotiable so the users could be specified by the customer, whether shared or exclusive.” However, the Examiner’s assertion regarding Wollrath’s leases being negotiable as to whether they are shared or exclusive is not supported by the teachings of Wollrath. Wollrath fails to mention anything other than leases permitted shared access (Wollrath, Abstract; column 3, lines 31-37; lines 42-44; lines 50-52; lines 59-62; column 4, lines 6-7; lines 14-22; and claim 1). Nowhere does Wollrath mention anything about requesting exclusive lease access to resources. Since Wollrath fails to make any mention of exclusive leases, the Examiner is merely speculating that Wollrath’s system includes the ability to negotiate exclusive leases. The use of such hindsight-based speculation by the Examiner in a rejection is clearly improper.

### **Claim 8:**

Regarding claim 8, Wollrath fails to teach or suggest that the service is a space service, wherein said space service comprises a plurality of service advertisements, wherein each service advertisement comprises information to enable access by client processes to resources provided by a corresponding service; wherein said client process is a service, wherein said plurality of service advertisements includes a service advertisement corresponding to said service; and wherein said lease access to said resource is lease access for publishing of said service advertisement, wherein, during said publishing, said service advertisement is accessible to client processes of said space service.

The Examiner rejects claim 8 by stating, “the lease renewal notice would be an advertisement and would, inherently, contain an address to response to.” The Examiner has not cited any portion of Wollrath, but instead attempts to reject claim 8 based only upon the Examiner’s own (erroneous) conclusory opinion regarding the teachings of Wollrath. Wollrath does not teach or suggest anything regarding a space service that comprises a plurality of service advertisements each of which includes information to enable access to resources provided by services. Nor does Wollrath mention anything regarding a client process that is a service, wherein the lease access to the resource is lease access *for publishing of the service advertisement*. Wollrath fails to mention anything about service advertisements at all.

Additionally, the Examiner’s statement regarding a lease renewal notice being an advertisement fails to take into account the fact that Appellants’ claim 8 requires that one of the plurality of service advertisements corresponds to the client process as a service. Wollrath does not describe any lease renewal notice corresponding to a client process that is a service. The Examiner is merely using hindsight analysis in an attempt to insert the limitations of claim 8 into the teachings of Wollrath. Such a rejection is clearly improper. Furthermore, the single statement by the Examiner completely ignores several of the limitations of claim 8 discussed above and which Wollrath fails to teach or suggest.

**Appellants note that the Examiner has failed to ever provide any rebuttal of the above arguments regarding claim 8.**

**Claims 9 and 30:**

Regarding claim 9, Wollrath fails to teach or suggest that the service is a space service that includes a plurality of service advertisements, where each service advertisement includes information to enable access by client processes to resources provided by a corresponding service, and where the resource is one of the plurality of service advertisements corresponding to a service.

The Examiner fails to cite any portion of Wollrath regarding the rejection of claim 9. Instead, the Examiner merely asserts, “the lease renewal notice would be an advertisement and would, inherently, contain an address to respond to.” The Examiner has completely ignored the specific limitations of claim 9. Firstly, as noted above regarding claim 8, without some specific teaching by Wollrath describing a lease renewal notice as an advertisement, the Examiner is merely using speculation to reject claim 9. Secondly, Wollrath does not describe anything regarding space services or service advertisements and clearly fails to mention anything about a leased resource being a service advertisement. The Examiner has failed to cite any portion of Wollrath regarding a leased resource being a service advertisement.

Without support from Wollrath’s teachings about the service being a space service including a plurality of service advertisements or about the leased resource being one of the plurality of service advertisements, the Examiner’s rejection of claim 9 is based purely upon the Examiner’s conjecture, which is clearly improper.

**Claims 10, 31 and 44:**

Regarding claim 10, Wollrath fails to teach or suggest wherein the messages are in a data representation language. The Examiner asserts, “it would be inherent that the messages are in a data representation language as they represent data.” The Examiner’s statement is completely incorrect. Wollrath does not describe sending messages in a data representation language. Instead, Wollrath teaches that the various components of his system communicate via making calls to each other, such as Wollrath’s “clean” and “dirty” calls. Wollrath is referring to procedure calls between components, which may include remote procedure calls (RMI). Procedure calls and remote procedure calls between software components do not traditionally use messages in a data representation language. Data for such calls is generally encoded in a message, such as through the process of marshalling, not described using a data representation language (such as XML).

Additionally, messages do not inherently use a data representation language just because they include data. Messages including data were used long before data representation languages were available. A data representation language (e.g. XML) is a specific type of language used for describing or representing data (e.g. content). Thus, it is not inherent to use a data representation language for a message merely because the message includes data, as suggested by the Examiner.

The Examiner, in response to the above arguments regarding Wollrath's failure to teach messages in a data representation language, argues that the use of data representation language would be inherent, "in that computers inherently represent data in languages they can understand." The Examiner further states, "computers understand binary code but are 'programmed' to understand other languages, such as Basic, Fortran or Java." However, as noted above, a data representation language is a particular type of language as is understood in the art, and the term "data representation language" does not merely refer to any language that a computer can understand, as the Examiner erroneously contends. The programming languages referred to by the Examiner are not data representation languages as data representation languages are understood in the art. One skilled in the art would not recognize Basic, Fortran, or Java as data representation languages, instead they are *programming* languages. Additionally, the Examiner's statements regarding programming languages bears absolutely no relevance to *messages in a data representation language*. Moreover, just because XML was known in the computer art does not mean that it would have been obvious to use XML or any other data representation language for messages as recited in claim 10. As the Federal Circuit stated in *In re Kotzab*, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000):

Most if not all inventions arise from a combination of old elements. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the Applicant.

The Examiner has not provided any factual evidence showing that it would have

been obvious to use messages in a data representation language as recited in claim 10. Thus, the rejection of claim 10 is not supported by the cited art and removal thereof is respectfully requested. Remarks similar to those above regarding claim 10 also apply to claims 31 and 44.

**Claims 11, 32 and 45:**

Regarding claim 11, Wollrath fails to teach or suggest that the data representation language is eXtensible Markup Language (XML). The Examiner argues, “XML is well known in the art to be used for computer messages.” Although XML is well known *for certain uses* in the prior art, XML is not well known for making procedure calls between software components as used in Wollrath *for lease management*. Moreover, Appellants disagree with the Examiner’s contention that just because XML is well known in the computer art it would be obvious to modify Wollrath to include the use of XML. Instead, as noted above regarding claim 10, data for such communication between components is generally encoded, such as through marshalling, and performed using programmatic calls (such as RMI described in Wollrath) rather than using a data representation language message, such as an XML message. Wollrath does teach anything that suggests using XML for communicating between the various components of his system. To the contrary, Wollrath *explicitly* teaches the use of RMI, which does not use XML or any other data representation language.

Additionally, as noted in § 2144.03(E) of the M.P.E.P., “[i]t is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principle evidence upon which a rejection is based.” Thus, the rejection of claim 11 is improper because the Examiner has merely stated his opinion regarding XML without providing any evidentiary support for such a conclusion.

Furthermore, as noted in § 2144.01 of the M.P.E.P., “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” The

Examiner has provide no motivation for modifying Wollrath to include the use of messages in a data representation language other than the fact that XML was generally known.

Thus, for at least the reasons presented above, the rejection of claim 11 is not supported by the prior art and removal thereof is respectfully requested. Remarks similar to those above regarding claim 11 also apply to claims 32 and 45.

**Claims 12-15, 33-35 and 46-47:**

In regard to claim 12, Wollrath does not teach or suggest that the same message endpoint that is used by the client process to send and receive messages for accessing the resource provided by the service also sends the lease renewal message automatically without intervention by the client process. In Wollrath, lease management communications are not performed through the same message endpoint that is used by the client process to send and receive messages for accessing the resource provided by the service. Thus, even if the lease management of Wollrath were automated, it would not suggest that the same message endpoint that is used by the client process to send and receive messages for accessing the resource provided by the service also sends the lease renewal message automatically without intervention by the client process. For a more detailed discussion regarding Wollrath's failure to teach that the same message endpoint that is used by the client process to send and receive messages for accessing the resource provided by the service also sends the lease renewal message automatically without intervention by the client process, please refer to the discussion of claim 1, above. For at least the reasons presented above, the rejection of claim 12 is not supported by the cited art. Similar arguments apply in regard to claims 33 and 46.

**Claims 16, 18, 19, 36 and 37:**

Regarding claim 16, Wollrath fails to teach or suggest a client process accessing a service advertisement for enabling access by client processes to resources provided by the service, the service advertisement comprising: a message schema comprising descriptions

of messages for managing leases of resources provided by the service; and an address for the service receiving the messages for managing leases of resources provided by the service. The Examiner rejects claim 16 stating only, “the lease renewal notice would be an advertisement and would, inherently, contain an address to response to”, without pointing out any portion of Wollrath supporting his erroneous assertion. Wollrath does not teach or even mention anything regarding accessing a service advertisement that comprises a message schema including descriptions of messages for managing leases of resources provided by a service. The Examiner has completely ignored this limitation of Appellants’ claim 16. The Examiner is merely stating his own conclusions based upon hindsight speculation, unsupported by the cited prior art in any way. The Examiner is attempting to insert the concept of service advertisements into the teachings of Wollrath without any corresponding teaching in Wollrath or any suggestion or motivation for modifying Wollrath. Thus, the rejection of claim 16 is improper.

For at least the reasons above, the rejection of claim 16 is not supported by the prior art and removal thereof is respectfully requested.

**Claim 17:**

Regarding claim 17, Wollrath fails to teach or suggest a client message endpoint generating the lease renewal message in accordance with a description of the lease renewal message comprised in the description of messages comprises in a service advertisement. The Examiner cites claim 9 of Wollrath and states, “the message endpoint would do so in accordance with a description of the lease message.” However, the Examiner has failed to cite any such description of a lease message in a service advertisement. Claim 9 of Wollrath merely mentions sending a request for a new lease period, but makes not mention that such a message is in accordance with a description of the lease renewal message comprised in the description of messages from a service advertisement, as required by Appellants claim 17.

Additionally, the Examiner, in the rejection of claim 1, relies upon an email system sending email messages corresponding to a message endpoint. However such an interpretation of message endpoint is not compatible with the rejection of claim 17. Email systems and email messages do not have or utilize lease renewal message descriptions.

Wollrath fails to make any mention of a client message endpoint generating the lease renewal message in accordance with a description of the lease renewal message comprised in the description of messages comprises in a service advertisement. For at least the reasons above, the rejection of claim 17 is not supported by the prior art and removal thereof is respectfully requested. Similar remarks also apply to claim 36.

**Claim 20:**

Regarding claim 20, Wollrath fails to teach or suggest that the service is a space service that includes a plurality of service advertisements, each including information to enable access by client processes to resources provided by a corresponding service.

Wollrath further fails to teach or suggest where the client process is a service and where the plurality of service advertisements includes a service advertisement corresponding to the service and where the lease access to the resource is a lease access for publishing the service advertisement where during publishing the service advertisement is accessible to client processes of the space service. The Examiner has completely ignored many of the limitations recited by claim 20. The Examiner fails to cite any portion of Wollrath regarding the rejection of claim 20. Instead, the Examiner merely asserts, “the lease renewal notice would be an advertisement and would, inherently, contain an address to respond to.” Firstly, without some specific teaching by Wollrath describing a lease renewal notice as an advertisement, the Examiner is merely using speculation to rejection claim 20. Secondly, Wollrath does not describe anything regarding space services or service advertisements and clearly fails to mention anything



about a leased resource being a service advertisement. The Examiner has failed to cite any portion of Wollrath regarding a leased resource being a service advertisement.

Wollrath makes absolutely no mention of a client (that requests lease access to a resource) being a service. Additionally, Wollrath fails to mention anything about lease access for publishing a service advertisement for the client, which is a service.

The Examiner's argument amounts to nothing more than a single assumption that a lease renewal notice being an advertisement including an address. The Examiner has failed to provide any basis for a prima facie rejection of claim 20.

Without support from Wollrath about the service being a space service including a plurality of service advertisements or about the client being service for which one of the plurality of service advertisements corresponds or about lease access for publishing the corresponding service advertisement, the Examiner's rejection of claim 20 is based purely upon the Examiner's speculation, which is clearly improper.

#### **Claims 21, 38 and 48:**

Regarding claim 21, Wollrath fails to teach or suggest that the service is a space service that includes a plurality of service advertisements, where each service advertisement includes information to enable access by client processes to resources provided by a corresponding service, and where the resource is one of the plurality of service advertisements corresponding to a service.

The Examiner fails to cite any portion of Wollrath regarding the rejection of claim 21. Instead, the Examiner merely asserts, "the lease renewal notice would be an advertisement and would, inherently, contain an address to respond to." Firstly, without some specific teaching by Wollrath describing a lease renewal notice as an advertisement, the Examiner is merely using speculation to reject claim 21. Secondly, Wollrath does not describe anything regarding space services or service advertisements

and clearly fails to mention anything about a leased resource being a service advertisement. The Examiner has failed to cite any portion of Wollrath regarding a leased resource being a service advertisement.

Without support from Wollrath's teachings about the service being a space service including a plurality of service advertisements or about the leased resource being one of the plurality of service advertisements, the Examiner's rejection of claim 21 is based purely upon the Examiner's speculation, which is clearly improper. Similar remarks apply to claims 38 and 48.

**Claims 22, 39 and 49:**

Regarding claim 22, Wollrath fails to teach or suggest wherein the messages are in a data representation language. The Examiner asserts, "it would be inherent that the messages are in a data representation language as they represent data." The Examiner's statement is completely incorrect. Wollrath does not describe sending messages in a data representation language. Instead, Wollrath teaches that the various components of his system communicate via making calls to each other, such as Wollrath's "clean" and "dirty" calls. Wollrath is referring to procedure calls between components, which may include remote procedure calls (RMI). Procedure calls and remote procedure calls between software components do not traditionally use messages in a data representation language. Data for such calls is generally encoded in a message, such as through the process of marshalling, not described using a data representation language (such as XML).

Additionally, messages do not inherently use a data representation language just because they include data. Messages including data were used long before data representation languages were available. A data representation language (e.g. XML) is a specific type of language used for describing or representing data (e.g. content). Thus, it is not inherent to use a data representation language for a message merely because the message includes data, as suggested by the Examiner.

The Examiner, in response to the above arguments regarding Wollrath's failure to teach messages in a data representation language, argues that the use of data representation language would be inherent, "in that computers inherently represent data in languages they can understand." The Examiner further states, "computers understand binary code but are 'programmed' to understand other languages, such as Basic, Fortran or Java." However, as noted above, a data representation language is a particular type of language as is understood in the art, and the term "data representation language" does not merely refer to any language that a computer can understand, as the Examiner erroneously contends. The programming languages referred to by the Examiner are not data representation languages as data representation languages are understood in the art. One skilled in the art would not recognize Basic, Fortran, or Java as data representation languages, instead they are *programming* languages. Additionally, the Examiner's statements regarding programming languages bears absolutely no relevance to *messages in a data representation language*. Moreover, just because XML was known in the computer art does not mean that it would have been obvious to use XML or any other data representation language for messages as recited in claim 10. As the Federal Circuit stated in *In re Kotzab*, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000):

Most if not all inventions arise from a combination of old elements. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the Applicant.

The Examiner has not provided any factual evidence showing that it would have been obvious to use messages in a data representation language as recited in claim 22. Thus, the rejection of claim 22 is not supported by the cited art and removal thereof is respectfully requested. Remarks similar to those above regarding claim 22 also apply to claims 39 and 49.

**Claims 23, 40 and 50:**

Regarding claim 23, Wollrath fails to teach or suggest that the data representation language is eXtensible Markup Language (XML). The Examiner argues, “XML is well known in the art to be used for computer messages.” Although XML is well known *for certain uses* in the prior art, XML is not well known for making procedure calls between software components as used for lease management in Wollrath. Moreover, Appellants disagree with the Examiner’s contention that just because XML is well known in the computer art it would be obvious to modify Wollrath to include the use of XML. Instead, as noted above regarding claim 10, data for such communication between components is generally encoded, such as through marshalling, and performed using programmatic calls (such as RMI described in Wollrath) rather than using a data representation language message, such as an XML message. Wollrath does teach anything that suggests using XML for communicating between the various components of his system.

Additionally, as noted in § 2144.03(E) of the M.P.E.P., “[i]t is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principle evidence upon which a rejection is based.” Thus, the rejection of claim 11 is improper because the Examiner has merely stated his opinion regarding XML without providing any evidentiary support for such a conclusion.

Furthermore, as noted in § 2144.01 of the M.P.E.P., “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” The Examiner has provide no motivation for modifying Wollrath to include the use of messages in a data representation language other than the fact that XML was generally known.

Thus, for at least the reasons presented above, the rejection of claim 23 is not supported by the prior art and removal thereof is respectfully requested. Remarks similar to those above regarding claim 23 also apply to claims 40 and 50.

### VIII. CONCLUSION

For the foregoing reasons, it is submitted that the Examiner's rejection of claims 1-50 was erroneous, and reversal of his decision is respectfully requested.

The Commissioner is authorized to charge the appeal brief fee of \$500.00 and any other fees that may be due to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5181-63600/RCK. This Appeal Brief is submitted with a return receipt postcard.

Respectfully submitted,



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Date: November 8, 2005

## **IX. CLAIMS APPENDIX**

The claims on appeal are as follows.

1. A method for managing resources provided for clients by services in a distributed computing environment, comprising:

a client process obtaining lease access to a resource provided by a service, wherein said client process is operatively coupled to a client message endpoint configured to send messages to and receive messages from said service;

said client message endpoint receiving a lease renewal request message, wherein said lease renewal request message references said resource provided by said service; and

said client message endpoint sending a lease renewal response message, wherein said lease renewal response message requests renewal of said lease access to said resource provided by said service;

wherein said receiving a lease renewal request message and said sending a lease renewal response message are performed automatically by said client message endpoint without intervention by said client process; and

wherein the client process is configured to send and receive messages via the client message endpoint to access the resource provided by the service.

2. The method as recited in claim 1, further comprising:

said service receiving said lease renewal response message; and

said service renewing said lease access to said referenced resource in response to said receiving said lease renewal response message.

3. The method as recited in claim 1,

wherein said lease access is obtained for a first granted lease period; and

wherein said lease renewal response message requests renewal of said lease access for a second lease period.

4. The method as recited in claim 3, further comprising:

said service receiving said lease renewal response message; and

said service granting said lease access to said referenced resource for a second granted lease period in response to said receiving said lease renewal response message.

5. The method as recited in claim 3, wherein said second granted lease period is less than or equal to said requested second lease period.

6. The method as recited in claim 1, wherein said lease renewal response message requests shared lease access to said resource, wherein shared lease access allows other client processes to obtain lease access to said resource contemporarily with said client process.

7. The method as recited in claim 1, wherein said lease renewal response message requests exclusive lease access to said resource, wherein exclusive lease access prevents other client processes from obtaining lease access to said resource contemporarily with said client process.

8. The method as recited in claim 1,

wherein said service is a space service, wherein said space service comprises a plurality of service advertisements, wherein each service advertisement comprises information to enable access by client processes to resources provided by a corresponding service;

wherein said client process is a service, wherein said plurality of service advertisements includes a service advertisement corresponding to said service; and

wherein said lease access to said resource is lease access for publishing of said service advertisement, wherein, during said publishing, said service advertisement is accessible to client processes of said space service.

9. The method as recited in claim 1, wherein said service is a space service, wherein said space service comprises a plurality of service advertisements, wherein each service advertisement comprises information to enable access by client processes to resources provided by a corresponding service, and wherein said resource is one of said plurality of service advertisement corresponding to a first service.

10. The method as recited in claim 1, wherein said messages are in a data representation language.

11. The method as recited in claim 10, wherein said data representation language is eXtensible Markup Language (XML).

12. A method for managing resources provided for clients by services in a distributed computing environment, comprising:



a client process obtaining access to a resource provided by a service for a first granted lease period, wherein said client process is operatively coupled to a client message endpoint configured to send messages to said service;

said client message endpoint sending, prior to said first granted lease period expiring, a lease renewal message, wherein said lease renewal message requests access to said resource provided by said service for a second lease period;

wherein said sending a lease renewal message is performed automatically by the client message endpoint without client process intervention; and

wherein the client process is configured to send and receive messages via the client message endpoint to access the resource provided by the service.

13. The method as recited in claim 12, further comprising:

said service receiving said lease renewal message; and

said service granting access to said referenced resource for a second granted lease period in response to said receiving said lease renewal response message.

14. The method as recited in claim 13, wherein said second granted lease period is less than or equal to said requested second lease period.

15. The method as recited in claim 13, further comprising said service sending to said client message endpoint a lease renewal response message advising said client process of said second granted lease period.

16. The method as recited in claim 12, further comprising:

said client process accessing a service advertisement for enabling access by client processes to resources provided by said service, said service advertisement comprising:

a message schema comprising descriptions of messages for managing leases of resources provided by said service; and

an address for said service receiving said messages for managing leases of resources provided by said service.

17. The method as recited in claim 16, further comprising said client message endpoint generating said lease renewal message in accordance with a description of said lease renewal message comprised in said descriptions of messages.

18. The method as recited in claim 16, wherein said lease renewal message is sent by said client message endpoint to said address for said service receiving said messages.

19. The method as recited in claim 16, wherein said address is a Uniform Resource Identifier (URI).

20. The method as recited in claim 12,

wherein said service is a space service, wherein said space service comprises a plurality of service advertisements, wherein each service advertisement comprises information to enable access by client processes to resources provided by a corresponding service;

wherein said client process is a service, wherein said plurality of service advertisements includes a service advertisement corresponding to said service; and

wherein said lease access to said resource is lease access for publishing of said service advertisement, wherein, during said publishing, said service advertisement is accessible to client processes of said space service.

21. The method as recited in claim 12, wherein said service is a space service, wherein said space service comprises a plurality of service advertisements, wherein each service advertisement comprises information to enable access by client processes to resources provided by a corresponding service, and wherein said resource is one of said plurality of service advertisement corresponding to a first service.

22. The method as recited in claim 12, wherein said messages are in a data representation language.

23. The method as recited in claim 22, wherein said data representation language is eXtensible Markup Language (XML).

24. A distributed computing system, comprising:

a service device; and

a client device comprising:

a client process executable within said client device; and

a client message endpoint executable within said client device and operatively coupled to said client process, wherein said client message endpoint is configured to send messages to and receive messages from said service device;

wherein said client process is configured to:

obtain lease access to a resource provided by said service device;

wherein said client message endpoint is configured to:

receive a lease renewal request message, wherein said lease renewal request message references said resource provided by said service device; and

send a lease renewal response message, wherein said lease renewal response message requests renewal of said lease access to said resource provided by said service device;

wherein said receiving a lease renewal request message and said sending a lease renewal response message are performed automatically by said client message endpoint without intervention by said client process; and

wherein the client process is configured to send and receive messages via the client message endpoint to access the resource provided by the service.

25. The system as recited in claim 24, wherein said service device is configured to:

receive said lease renewal response message; and

renew said lease access to said referenced resource in response to said receiving said lease renewal response message.

26. The system as recited in claim 24,

wherein said lease access is obtained for a first granted lease period; and

wherein said lease renewal response message requests renewal of said lease access for a second lease period.

27. The system as recited in claim 26, wherein said service device is configured to:

receive said lease renewal response message; and

grant said lease access to said referenced resource for a second granted lease period in response to said receiving said lease renewal response message.

28. The system as recited in claim 24, wherein said lease renewal response message requests shared lease access to said resource, wherein shared lease access allows other client devices to obtain lease access to said resource contemporarily with said client device.

29. The system as recited in claim 24, wherein said lease renewal response message requests exclusive lease access to said resource, wherein exclusive lease access prevents other client devices from obtaining lease access to said resource contemporarily with said client device.

30. The system as recited in claim 24, wherein said service device is a space service device, wherein said space service device comprises a plurality of service advertisements, wherein each service advertisement comprises information to enable access by client devices to resources provided by a corresponding service device, and wherein said resource is one of said plurality of service advertisement corresponding to a first service device.

31. The system as recited in claim 24, wherein said messages are in a data representation language.

32. The system as recited in claim 31, wherein said data representation language is eXtensible Markup Language (XML).

33. A distributed computing system, comprising:

a service device; and

a client device comprising:

a client process executable within said client device; and

a client message endpoint executable within said client device and operatively coupled to said client process, wherein said client message endpoint is configured to send messages to and receive messages from said service device;

wherein said client process is configured to:

obtain lease access to a resource provided by said service device;

wherein said client message endpoint is configured to:

send, prior to said first granted lease period expiring, a lease renewal message, wherein said lease renewal message requests access to said resource provided by said service device for a second lease period;

wherein said sending a lease renewal message is performed automatically by the client message endpoint without client process intervention; and

wherein the client process is configured to send and receive messages via the client message endpoint to access the resource provided by the service.

34. The system as recited in claim 33, wherein said service device is configured to:

receive said lease renewal message; and

grant access to said referenced resource for a second granted lease period in response to said receiving said lease renewal response message.

35. The system as recited in claim 34, wherein said service device is further configured to send to said client message endpoint a lease renewal response message advising said client process of said second granted lease period.

36. The system as recited in claim 33, wherein said client device is further operable to:

access a service advertisement for enabling access by client devices to resources provided by said service device, said service advertisement comprising:

a message schema comprising descriptions of messages for managing leases of resources provided by said service device; and

an address for said service device receiving said messages for managing leases of resources provided by said service device;

wherein said client message endpoint is further operable to:

generate said lease renewal message in accordance with a description of said lease renewal message comprised in said descriptions of messages; and

wherein said lease renewal message is sent by said client message endpoint to said address for said service device receiving said messages.

37. The system as recited in claim 36, wherein said address is a Uniform Resource Identifier (URI).

38. The system as recited in claim 33, wherein said service device is a space service device, wherein said space service device comprises a plurality of service advertisements, wherein each service advertisement comprises information to enable access by client devices to resources provided by a corresponding service device, and wherein said resource is one of said plurality of service advertisement corresponding to a first service device.

39. The system as recited in claim 33, wherein said messages are in a data representation language.

40. The system as recited in claim 39, wherein said data representation language is eXtensible Markup Language (XML).

41. A tangible computer accessible medium comprising program instructions, wherein the program instructions are computer-executable to implement:

a client process obtaining lease access to a resource provided by a service, wherein said client process is operatively coupled to a client message endpoint configured to send messages to and receive messages from said service;



said client message endpoint receiving a lease renewal request message, wherein  
said lease renewal request message references said resource provided by  
said service; and

said client message endpoint sending a lease renewal response message, wherein  
said lease renewal response message requests renewal of said lease access  
to said resource provided by said service;

wherein said receiving a lease renewal request message and said sending a lease  
renewal response message are performed automatically by said client  
message endpoint without intervention by said client process; and

wherein the client process is configured to send and receive messages via the  
client message endpoint to access the resource provided by the service.

42. The computer accessible medium as recited in claim 41, wherein the  
program instructions are further computer-executable to implement:

said service receiving said lease renewal response message; and

said service renewing said lease access to said referenced resource in response to  
said receiving said lease renewal response message.

43. The computer accessible medium as recited in claim 41,

wherein said lease access is obtained for a first granted lease period; and

wherein said lease renewal response message requests renewal of said lease  
access for a second lease period; and

wherein the program instructions are further computer-executable to implement:

said service receiving said lease renewal response message; and

said service granting said lease access to said referenced resource for a second granted lease period in response to said receiving said lease renewal response message.

44. The computer accessible medium as recited in claim 41, wherein said messages are in a data representation language.

45. The computer accessible medium as recited in claim 44, wherein said data representation language is eXtensible Markup Language (XML).

46. A tangible computer accessible medium comprising program instructions, wherein the program instructions are computer-executable to implement:

a client process obtaining access to a resource provided by a service for a first granted lease period, wherein said client process is operatively coupled to a client message endpoint configured to send messages to said service;

said client message endpoint sending, prior to said first granted lease period expiring, a lease renewal message, wherein said lease renewal message requests access to said resource provided by said service for a second lease period;

wherein said sending a lease renewal message is performed automatically by the client message endpoint without client process intervention; and

wherein the client process is configured to send and receive messages via the client message endpoint to access the resource provided by the service.

47. The computer accessible medium as recited in claim 46, wherein the program instructions are further computer-executable to implement:

said service receiving said lease renewal message; and

said service granting access to said referenced resource for a second granted lease period in response to said receiving said lease renewal response message; and

said service sending to said client message endpoint a lease renewal response message advising said client process of said second granted lease period.

48. The computer accessible medium as recited in claim 46, wherein said service is a space service, wherein said space service comprises a plurality of service advertisements, wherein each service advertisement comprises information to enable access by client processes to resources provided by a corresponding service, and wherein said resource is one of said plurality of service advertisement corresponding to a first service.

49. The computer accessible medium as recited in claim 46, wherein said messages are in a data representation language.

50. The computer accessible medium as recited in claim 49, wherein said data representation language is eXtensible Markup Language (XML).

**X. EVIDENCE APPENDIX**

No evidence submitted under 37 CFR §§ 1.130, 1.131 or 1.132 or otherwise entered by the Examiner is relied upon in this appeal.

**XI. RELATED PROCEEDINGS APPENDIX**

There are no related proceedings.